

BASE Line

The quarterly newsletter of BASE
Summer 2018

B A S E

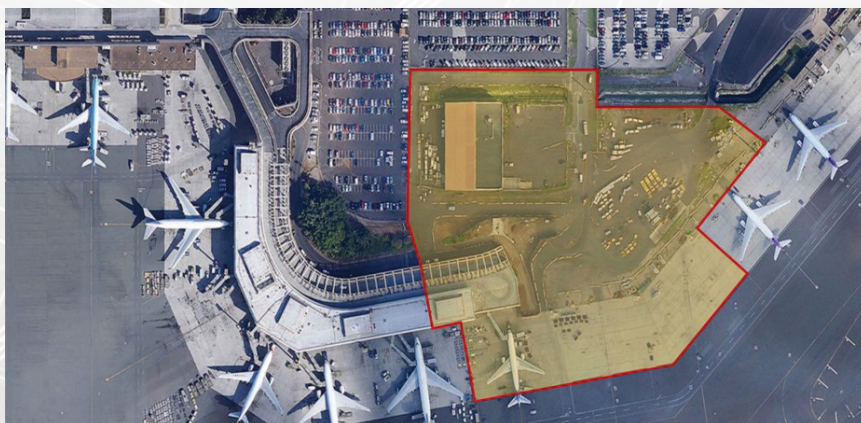
Gonna fly now

Aviation Work

Like an inspired Rocky Balboa training montage, BASE is inspired to fulfill client needs and program objectives in every project. Our recent work on aviation projects reflect our ability to “roll with the punches” and adapt quickly to changing requirements and roles to keep projects running on schedule and on budget.

HNL IIT MAUKA EXTENSION – COMMUTER TERMINAL RELOCATION AT GATE 6 DIAMOND HEAD CONCOURSE, DANIEL K. INOUE INTERNATIONAL AIRPORT HONOLULU, HI

The Mauka Extension project is a new concourse to address the need for additional gate capacity during peak hours and new gates capable of handling larger widebody aircraft. Prior to commencing work on the Mauka Extension project, however, two local commuter carriers (Island Air and Mokulele Airlines) have to first be relocated in order to demolish the building they occupy. The State awarded Hensel Phelps a separate design-build project to renovate Gate 6 at the Diamond Head Concourse to accommodate Island Air and to construct a new facility for Mokulele Airlines. The \$40 million commuter terminal relocation work was put on a fast-track and BASE was retained as structural engineer of record to provide design and construction administration services. BASE and the design-build team worked very expediently to complete the design and construction of Gate 6 for Island Air’s and Mokulele’s relocation. Unfortunately, in November 2017 Island Air declared bankruptcy, leaving the space at Gate 6 vacant. Shortly thereafter, Gate 6 was repurposed and revised to accommodate a new major U.S. airline. Substantial modifications were incorporated into the design as construction was progressing on the original plan. Success of the project requires thorough coordination, design flexibility and the ability to deliver in a very fast-track environment.



Owner: State of Hawaii Dept. of Transportation-Airports Division
Architect: KBJ-L&B Architects, LLC
Contractor: Hensel Phelps

P-109 AIRCRAFT MAINTENANCE HANGAR ANDERSEN AFB, GUAM



This new 72,500 SF design-build aviation maintenance hangar features high bay spaces, crew and equipment spaces, administrative spaces, and a 2,000 SF fire pump building. The primary challenge was providing an economical long span roof structure that could resist extreme seismic forces and 195 mph typhoon winds and be efficiently constructed on the remote island of Guam. Built up structural steel roof trusses supporting wide flange purlins with metal deck and concrete topping were used to frame the roof. The trusses span from the back wall of the hangar to a 28.5 ft.-deep steel box truss clear spanning 327 ft. over the hangar door opening. Design of the roof structure was further complicated by the fact that the approaches to addressing extremely high wind loads is often at odds with those for handling high seismic demands. For example, adding concrete topping helps resist high uplift forces, but it also increases the seismic inertial forces the building must resist. Such

Owner: NAVFAC Pacific
Architect: BRPH
Contractor: Pernix Guam, LLC

considerations were carefully assessed and fine-tuned throughout the design process.

CONRAC AT KAHULUI INTERNATIONAL AIRPORT (OGG) MAUI, HAWAII
CONRAC AT DANIEL K. INOUE INTERNATIONAL AIRPORT (HNL) HONOLULU, HAWAII

BASE is presently involved in two Consolidated Car Rental Facility (ConRAC) projects in Hawaii. Both facilities consist of a Customer Service Building where all rental car counters and administrative offices will be located; Ready/Return structure for rental car pick up, return, and overflow parking; and Quick Turnaround Area for refueling, light maintenance, and washing of vehicles.

ConRAC OGG is a four-level, 1.9 million SF facility. BASE was retained to provide value engineering for the general contractor. As a result of cost savings, BASE ultimately redesigned the entire structure as the engineer of record (EOR).

For the five-level, 1.8 million SF ConRAC HNL BASE is EOR for foundation value engineering redesign that saves on the order of \$5 million. BASE is also assisting the general contractor with quality control review services.

- Owner: State of Hawaii Dept. of Transportation-Airports Division
- Architect: Demattei Wong Architecture, Inc.
- OGG Contractor: Hawaiian Dredging Construction Co.
- HNL Contractor: Watts Constructors LLC



ConRAC OGG - Courtesy of Hawaiian Dredging Construction Co.



ConRAC HNL - Courtesy of Demattei Wong Architecture

P-904 MV-22 HANGAR & INFRASTRUCTURE AND P-908 MV-22 HANGAR MARINE CORPS BASE HAWAII



- Owner: NAVFAC Pacific
- P-904 Contractor: Watts Constructors LLC
- P-908 Contractor: Hensel Phelps

BASE provided special inspection and special inspector of record (SIOR) services for two separate multi-story Type II modified aircraft maintenance hangars for MV-22 squadrons. The

projects also included the construction of aircraft staging areas and access to supporting facilities such as surrounding hangars and wash racks.

HNL AIRPORT HANGAR & CARGO FACILITY HONOLULU, HI

This design-build project is one component of the State of Hawaii's \$1.7 billion airport modernization program. The building complex totals approximately 270,000 SF of which approximately half is aircraft or cargo bay area under pre-engineered fabric-roofed galvanized steel frame structure. This project presented a unique situation in that the structural and civil disciplines were required to complete 100% design before other disciplines, including architecture, thus careful coordination was essential. Structural design was also completed before final loads and anchor bolt layouts were provided by the pre-engineered fabric-roofed steel frame structure manufacturer, which required the foundations to be designed with enough flexibility to facilitate future modifications in a timely manner.

With structural design completed early, the construction manager was able to order materials early and get a jump start on construction of the project. By taking on some extra complexity in the structural design, BASE was able to better accommodate the original architectural intent for the hangar.

P-822 MCAS COMPLEX MARINE CORPS BASE HAWAII

This design-build project consists of two buildings, a Terminal Building and an Aircraft Fire and Rescue Station. The Terminal Building includes security, agriculture room, departure lounge, VIP departure lounge, baggage claim, and exhibitory display, snack bar, baggage handling and related offices, and scanning equipment. It also houses a cargo area with rooms to support the cargo activities. This project was recognized by the Design-Build Institute of America with its National Award of Merit in the aviation category in 2015.



- Owner: NAVFAC Pacific
- Architect: RIM Architects
- Contractor: dck pacific construction LLC



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- Contractor: dck pacific construction LLC